This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-7.   (Canceled)

8.   (Currently amended) A method of <u>avoiding pop-up windows and excessive scrolling</u> <u>while</u> displaying ~~related~~ data sub-items corresponding to an object displayed on a computer screen, the method comprising:

determining that a cursor is ~~positioned to point at~~ <u>initially hovering over</u> the object on the computer screen, wherein the object represents a variable incorporated into a line of program code that is currently displayed on the computer screen;

evaluating the object to determine if the object:

has a variable value; and

has related data sub-items;

assembling variable values for the object and the related data sub-items; and

<u>generating an expansion tree of data tips incorporating an auto-expansion feature,</u> <u>the auto-expansion feature comprising:</u>

displaying on the computer screen the values of the object in a parent data tip<u>, the parent data tip containing a first</u> ~~window along with an~~ expansion widget indicator of the related data sub-items<u>;</u>[[,]]

<u>determining that the cursor is next hovering over</u> the <u>first</u> expansion widget indicator<u>, and automatically launching</u> ~~operable to launch~~ a <u>first</u> child data tip ~~window~~ <u>for</u> <u>that is a part of the expansion tree of data tips, the first child data</u> <u>tip</u> displaying the related data sub-items together with associated data values for each individual data sub-item<u>; and</u>

<u>automatically dismissing the first child data tip upon determining that the</u> <u>cursor has been moved out of the first child data tip and is hovering inside the</u> <u>parent data tip.</u>

~~, the parent and child data tip windows displayed simultaneously and~~
~~overlaying at least a portion of the listing of the program code.~~

9-11.   (Canceled)

12.   (Currently amended) The method of claim 8, further comprising allowing the displayed
values to become temporarily transparent allowing visual examination of underlying
displayed information without dismissing the parent <u>data tip</u> and <u>the first</u> child data tip
~~windows~~.

13.   (Currently amended) A system for displaying <u>an expansion tree of</u> data tips related to an
object displayed on a computer screen, the system comprising:

a computer screen to display the object and the <u>expansion tree of</u> data tips;

a processor for executing instructions corresponding to the method of:

determining that a cursor is ~~positioned to point at~~ <u>initially hovering over</u> the
object, wherein the object represents a variable incorporated into a line of program code;

loading and evaluating the object to determine if the object:

has a variable value associated with the variable; <u>and</u>

has related data sub-items; ~~and~~

if the related data sub-items are capable of expansion into lower-tier sub-items;

assembling variable values for the object and the related data sub-items;

displaying the variable values of the object in a parent data tip ~~window~~
located adjacent to the cursor selected object; <u>and</u>

<u>determining that the cursor is next hovering over a first expansion widget</u>
<u>indicator contained in the parent data tip, and automatically launching</u>

~~displaying the related data sub-items in~~ a child data tip ~~window, wherein the~~
~~object and the related data sub-items are related in a parent and child relationship,~~ <u>as an</u>
<u>expansion data tip to the parent data tip</u>, the child data tip window having <u>a second</u>
<u>expansion widget indicator associated with a first data sub-item contained inside the first</u>

child data tip; a third expansion widget indicator associated with a second data sub-item

contained inside the first child data tip; and wherein upon determining that the cursor is

hovering over one of the second or the third expansion widget indicators, a second child

data tip is automatically launched as a part of the expansion tree of data tips.

~~an expansion widget indication of the lower-tier sub-items if the lower-tier sub-~~

~~items exist;~~

~~determining that the cursor has been positioned upon; and~~

~~displaying an additional data tip window simultaneously with the parent and the~~

~~child data tip windows, and overlaying at least a portion of the listing of the program~~

~~code.~~

14.   (Previously Presented) The system of claim 13, wherein evaluating the object further
        comprises evaluating an expression associated with the object.

15.   (Previously Presented) The system of claim 13, wherein displaying the values of the
        object further comprises displaying a variable associated with the object and values of the
        variable.

16.   (Cancelled)

17.   (Currently amended) The system of claim 13, wherein the parent data tip ~~window~~
        becomes temporarily transparent upon request allowing visual examination of underlying
        displayed information without dismissing the parent data tip ~~window~~.

18.   (Currently amended) A machine-readable storage medium having instructions therein,
        executable by a machine to perform a method comprising:
                determining that a cursor on a computer screen is positioned to point at the object,
        wherein the object represents a variable incorporated into a line of program code that is
        currently displayed on the computer screen;

loading the cursor-selected object;

evaluating the object to determine if the object:

has a variable value associated with the variable;

has related data sub-items; and

if the related data sub-items are capable of expansion into lower-tier sub-

items;

assembling variable values for the object and the related data sub-items, wherein

the object and the related data sub-items are related in a parent and child relationship; and

generating an expansion tree of data tips incorporating an auto-expansion feature,

the auto-expansion feature comprising:

displaying on the computer screen the variable values of the object in a

parent data tip, the parent data tip containing a first ~~window along with an~~

expansion widget indicator of the related data sub-items;~~[[,]]~~

determining that the cursor is next positioned to point to the first

expansion widget indicator, and automatically launching a first ~~the display also~~

~~including the lower-tier sub-items in a~~ child data tip that is a part of the expansion

tree of data tips, the first child data tip including the lower-tier sub-items; and

automatically dismissing the first child data tip upon determining that the

cursor has been moved outside the first child data tip.

~~window that is launched upon activation of the expansion widget~~

~~indicator, the parent and child data tip windows displayed simultaneously and~~

~~overlaying at least a portion of the listing of the program code.~~

19-20. (Canceled)

21.   (Currently amended) A computer-implemented method for indicating on a computer

display, the values of variables in a software program, the computer-implemented method

comprising:

displaying on the computer display, an expression that is a part of the software

program, the expression containing a variable;

detecting the positioning of a pointer upon the variable;

displaying thereon, a first data tip ~~window~~ showing a first expanded version of the

variable, the first expanded version showing at least one individual data element that

defines the variable, together with a data value for the at least one individual data

element;

detecting the positioning of the pointer upon an expansion widget contained in the

first data tip ~~window; and~~

<u>automatically</u> displaying thereon, a child data tip <u>with at least a portion of the</u>

<u>child data tip overlapping the parent data tip, in an expansion tree of interactive data tips</u>

<u>that occupies less visible area on the computer display than an equivalent number of</u>

<u>watch windows; and</u>

<u>automatically dismissing the first child data tip upon determining that the cursor</u>

<u>has been moved outside the first child data tip.</u>

~~window showing a second expansion version of the variable, the second expanded~~

~~version showing the at least one individual data element together with additional~~

~~individual data elements that define the variable, the second expansion version further~~

~~showing corresponding data values for each of the additional individual elements.~~

22.   (Currently amended) The method of claim 21, <u>wherein the first child data tip shows a</u>

<u>second expansion version of the variable, the second expanded version showing the at</u>

<u>least one individual data element together with additional individual data elements that</u>

<u>define the variable, the second expansion version further showing corresponding data</u>

<u>values for each of the additional individual elements,</u> wherein the corresponding data

values are editable data values.

23.   (Currently amended) The method of claim 22, further comprising:

detecting the positioning of the pointer upon a first individual element inside the
child data tip ~~window~~; and

<u>automatically</u> displaying thereon, an editing menu showing a list of editing
operations that can be performed upon the first individual element contained in the child
data tip ~~window~~.

24.   (Currently amended) The method of claim 23, wherein the list of editing operations
       comprises editing an editable data value corresponding to the first individual element
       contained in the child data tip ~~window~~.

25.   (Previously Presented) The method of claim 24, wherein the editable data value is a
       numeric value.

26.   (Currently amended) The method of claim 24, wherein the editing operations comprise at
       least one of a) a copy operation, <u>or</u> b) a paste operation~~, c) a "change to a binary display"~~
       ~~operation, or d) a "change to a decimal display" operation~~.

27.   (Previously Presented) The method of claim 21, wherein the expression is displayed on
       the computer display as a result of execution of a breakpoint contained in the software
       program.

28.   (Previously Presented) The method of claim 27, wherein the first variable is incorporated
       into the expression prior to the expression being displayed on the computer as a result of
       execution of the breakpoint.

29.   (Previously Presented) The method of claim 21, wherein the first variable is a pre-
       existing element of the expression prior to the displaying of the expression on the
       computer.

30.   (Currently amended) The method of claim 8, wherein the ~~expression~~ line of program
        code is currently displayed on the computer screen as a result of execution of a
        breakpoint contained in the program code.

31.   (New) The method of claim 8, wherein the first child data tip comprises:
                a second expansion widget indicator associated with a first data sub-item
        contained inside the first child data tip;
                a third expansion widget indicator associated with a second data sub-item
        contained inside the first child data tip; and
                wherein upon determining that the cursor is hovering over one of the second or
        third expansion widget indicators, a second child data tip is automatically launched as a
        part of the expansion tree of data tips.

32.   (New) The method of claim 31, wherein the first expansion widget indicator changes
        from a first status indication to a second status indication when the first child data tip is
        launched, the first status indication indicative of the object having related data sub-items
        hidden from view; and further wherein the second expansion widget indicator changes
        from a third status indication to a fourth status indication when the second child data tip
        is launched, the third status indication indicative of the first data sub-item having
        additional related data sub-items hidden from view.

33.   (New) The method of claim 8, wherein the first expansion widget indicator changes from
        a plus sign to a minus sign when the first child data tip is launched, the plus sign
        indicative of the object having related data sub-items hidden from view that can be
        viewed by launching the first child data tip.